R. W. JOHNSON.
Clutch.

No. 204,977. Patented June 18, 1878.

FIG.1.

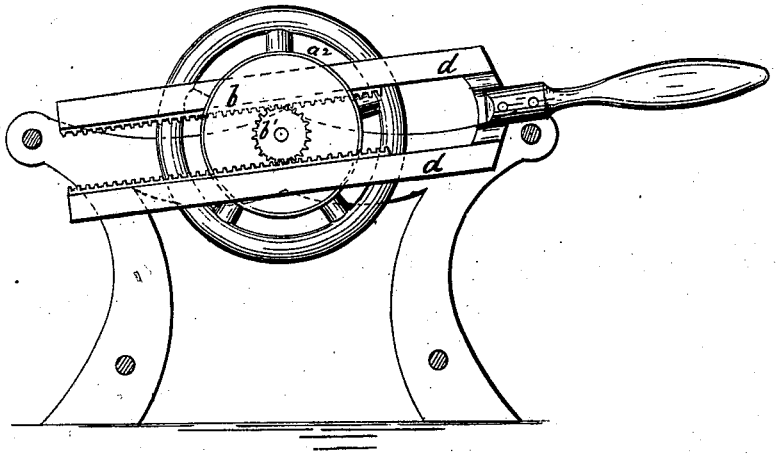


FIG.2.

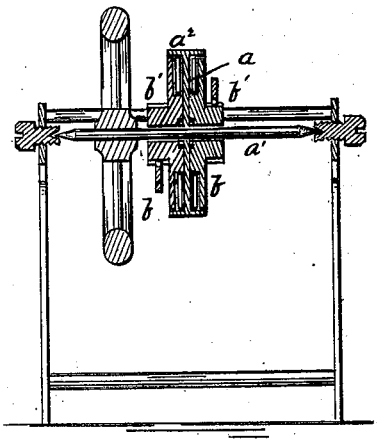


FIG.3.

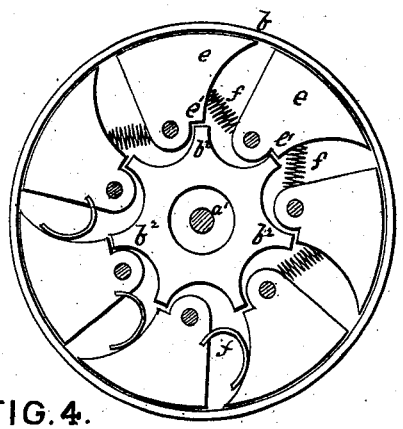
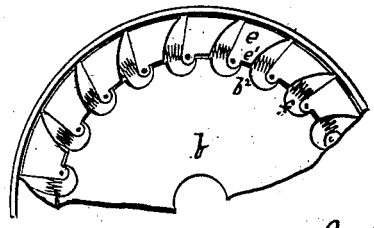


FIG.4.



WITNESSES
Saml R Turner
C. M. Sites

INVENTOR
Roice W. Johnson
By R.S. & A.P. Lacey ATTORNEY

UNITED STATES PATENT OFFICE.

ROICE W. JOHNSON, OF FORT DODGE, IOWA.

IMPROVEMENT IN CLUTCHES.

Specification forming part of Letters Patent No. **204,977**, dated June 18, 1878; application filed December 7, 1877.

To all whom it may concern:

Be it known that I, ROICE W. JOHNSON, of Fort Dodge, in the county of Webster and State of Iowa, have invented certain new and useful Improvements in Clutches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of this invention is to furnish a pivoted clutch which will be more substantial and sensitive, and act more promptly than devices of ordinary construction.

In the drawings, Figure 1 is a side elevation of the casing which contains the clutch. Fig. 2 is a vertical cross-section. Fig. 3 is an inner side view of the clutch-plate, showing the pivoted cams or clutches; and Fig. 4 shows a larger number of cams, made smaller in size and pivoted near the rim.

a is the central wheel affixed rigidly to the axis a^1. It has affixed around its periphery a cross-plate or barrel, a^2, against which the pivoted cams hereinafter described clutch in the operation of the machine.

b b are the revolving clutch-plates, constructed so that they will fit within the barrel a^2 and against the sides of the central wheel *a*. On their outer side they have affixed the pinions b^1 b^1 with which the rack *d* meshes, and on their inner sides they have formed a series of projections or stops, b^2 b^2, against which the pivoted clutches strike in the backward movement of the plate.

e is the clutch. It is pivoted to the inner side of the plate *b*, so that its outer end, which is curved to correspond with the curvation of the wheel *a*, as shown, will bear or clutch against the inner surface of the barrel a^2 in the forward movement of the device. It is formed with a shoulder, e', arranged and adapted to catch on the shoulder or projection b^2.

I employ a series of clutches, *e*, on each plate *b*, though one clutch alone will give a good effect. The series are pivoted around and on the inner side of the plate, as shown, and they are provided with springs *f* placed between them, as shown. When a single clutch is employed a suitable bearing would have to be provided on the plate for that end of the spring not against the clutch. The clutch is prevented from swinging too far over by the shoulder e' engaging the stop or projection b^2.

I prefer to employ a series of clutches, *e*, and connect them by intermediate springs *f*, as shown. Such an arrangement gives an almost continuous clutch, which acts simultaneously in all its parts, thereby giving the most accurate and substantial movements.

The shoulder e' on the clutch and the stop b^2 on the plate *b* are provided so as to limit the movement of the clutch and enable me to employ a spring of less stiffness, thereby rendering the device more sensitive. Without the shoulder e' and stop b^2 a stronger spring would have to be employed to prevent the clutch *e* from being thrown over too far on its pivoted point.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a clutch-wheel, the series of clutches *e* pivoted to the inner side of and arranged around the plate *b*, as shown, and braced one against another by the series of intermediate springs *f*, substantially as set forth.

2. The combination, with the plate *b*, constructed with the stop or projection b^2 and barrel a^2 on wheel *a*, of the pivoted clutch *e*, having the shoulder e' and spring *f*, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ROICE W. JOHNSON.

Witnesses:

I. GARMOE,

T. RUDESILL.